AMENDMENTS TO THE CLAIMS

1. **(Currently amended)** A method ~~of maintaining bandwidth capacity of a network~~ comprising:

~~defining~~ determining one or more future times ~~at~~ for which a bandwidth capacity of the network is evaluated;

determining [[a]] total bandwidth ~~capacity~~ capacities of the network ~~(TNC)~~ at ~~each of the~~ respective future times;

determining [[a]] total ~~demand~~ demands of users ~~(TUD)~~ for the network at ~~each of the~~ respective future times;

determining, by a ~~processor, a~~ computing device, predicted ~~utilization (PU)~~ utilizations of the network at ~~each of the~~ respective future times as ~~a function~~ functions of ~~the~~ corresponding total ~~demand~~ demands of users ~~(TUD)~~ and ~~the~~ corresponding total bandwidth ~~capacity~~ capacities of the network ~~(TNC)~~;

determining ~~defining a~~ respective maximum acceptable ~~utilization and a minimum acceptable utilization of the network at each of the~~ utilizations of the network for the ~~respective~~ future times;

comparing, by ~~a processor,~~ the computing device, respective predicted ~~utilization (PU)~~ utilizations of the network to ~~the~~ corresponding maximum ~~and minimum~~ acceptable ~~utilization~~ utilizations of the network ~~at each of~~ for the future times;

~~based upon said comparing, defining an adjusted predicted utilization (APU) at each of the future times, said defined APU being between the maximum and minimum acceptable utilization of the network;~~

determining, for respective future times, ~~each future time, a change~~ changes in total network bandwidth ~~capacity (DCNC)~~ capacity to be applied to the network in order to increase ~~or decrease~~ the total bandwidth capacity of the network based at least partly on said comparing of respective predicted utilizations of the network to ~~maintain the defined APU~~ corresponding maximum acceptable utilizations;

determining ~~at each of the,~~ for respective future times, [[a]] lead ~~time~~ times for adding ~~a product for applying~~ one or more products for providing the determined ~~DCNC to the~~ changes in total network bandwidth capacity, wherein the lead ~~time indicates an~~

~~amount~~ times indicate respective amounts of time needed for delivery and installation of ~~purchased DCNC~~ the one or more products; and

~~applying~~ initiating the determined ~~DCNC~~ changes in total network bandwidth capacity in advance of ~~each of the~~ respective future times by at least the determined ~~based on the~~ corresponding lead ~~time determined with respect to the future~~ times.

2. (**Canceled**)

3. (**Canceled**)

4. (**Canceled**)

5. (**Canceled**)

6. (**Currently amended**) The method of claim 1 wherein determining [[a]] total bandwidth ~~capacity~~ capacities of the network ~~(TNC)~~ at ~~each of the~~ respective future times ~~is a function of~~ comprises determining [[a]] present bandwidth ~~capacity~~ capacities of the network ~~(PNC)~~ and identifying [[a]] planned changes in network bandwidth capacity ~~(PCNC)~~ to be applied to the network between a present time and ~~each of the~~ respective future times.

7. (**Currently amended**) The method of claim 1 wherein determining, for respective future times, changes ~~a change~~ in total network bandwidth ~~capacity~~ capacities ~~(DCNC) is~~ comprises determining the changes in the total network bandwidth capacities based on at least ~~a function of~~ one or more of the following: a current utilization ~~(CU)~~ of the network, a growth trend of a utilization of the network, or a cost measure of a bandwidth capacity to be added to the network.

8. (**Currently amended**) The method of claim 7 wherein ~~said~~ the current utilization ~~(CU)~~ of the network is indicative of a high percent usage of a present bandwidth capacity of the network ~~(PNC)~~ for a particular percentage of time.

9. (**Original**) The method of claim 7 wherein the growth trend is based on a regression of data representative of a past growth of the utilization of the network.

10. (**Currently amended**) The method of claim 1 wherein said determining, by the computing device, predicted utilizations of the network comprises determining the [[a]] total demands of users ~~(TUD)~~ for the network at ~~each of~~ the respective future times ~~is~~ as a function of at least ~~determining~~ a present demand of users ~~(PUD)~~ for the network and ~~determining~~ a change

in demand of users ~~(CUD)~~ for the network between a present time and ~~each of the~~ respective future times.

11. (**Currently amended**) The method of claim 10 wherein ~~determining an~~ the ~~anticipated~~ change in demand of users ~~(CUD)~~ for the network comprises ~~determining~~ a demand requirement for a roll-out of an application operating via the network.

12. (**Currently amended**) The method of claim 1 wherein said determining, by the computing device, the [[a]] predicted utilizations ~~(PU)~~ of the network at ~~each of the~~ respective future times comprises dividing the total demands of users ~~(TUD)~~ for the network by the total bandwidth ~~capacity~~ capacities of the network ~~(TNC)~~ at ~~each of the~~ respective future times.

13. (**Currently amended**) The method of claim 1 wherein the maximum acceptable utilizations for ~~the~~ respective future times ~~of the network~~ is a function of a response time of an application operating via the network.

14. (**Currently amended**) The method of claim 13 wherein the response time of the application is a function of one or more of the following: a distance between a client and a server of the application wherein ~~said~~ the client and server are coupled to the network, a connection speed of the client to the network, or a utilization of the network during a period of time at which the client accesses the application.

15. (**Currently amended**) The method of claim 1 further comprising:

planning a budget for applying the determined changes in total network bandwidth capacity ~~(DCNC)~~ to the network; and

determining a cost measure of the determined changes in network bandwidth capacity ~~(DCNC)~~.

16. (**Canceled**)

17. (**Currently amended**) A system ~~to maintain bandwidth capacity of a network, said system~~ comprising:

a processor configured to execute computer-executable instructions in order to cause the system to perform operations comprising:

~~define~~ determining a future time ~~times at~~ for which a bandwidth capacity of the network is evaluated;

determining[[e]] a total bandwidth capacity of the network ~~(TNC)~~ at ~~each of~~ the future time ~~times~~;

determining[[e]] a total demand ~~of users (TUD)~~ for the network at ~~each of~~ the future time ~~times~~;

determining[[e]] a predicted utilization ~~(PU)~~ of the network at ~~each of~~ the future time ~~times~~ as a function of the total demand ~~of users (TUD)~~ and the total bandwidth capacity of the network ~~(TNC)~~;

~~define~~ determining a maximum acceptable utilization ~~and minimum acceptable utilization~~ of the network at ~~each of for~~ the future ~~times~~ time;

comparing[[e]] the predicted utilization ~~(PU)~~ of the network to the maximum ~~and minimum~~ acceptable utilization of the network at ~~each of~~ the future ~~times~~ time;

~~define an adjusted predicted utilization (APU) at each of the future times, said defined APU being between the maximum and minimum acceptable utilization of the network;~~

determining[[e]], for ~~each~~ the future time, a change in total network bandwidth capacity ~~(DCNC)~~ to be applied to the network in order to increase ~~or decrease~~ the total bandwidth capacity of the network ~~to maintain the defined APU~~ based at least partly on said comparing ~~of~~ the predicted utilization of the network to the maximum acceptable utilization;

determining[[e]], for ~~at each of~~ the future ~~times~~ time, a lead time for adding ~~a~~ one or more products ~~for applying~~ to provide the determined ~~DCNC~~ change in total network bandwidth capacity to the network, wherein the lead time indicates an amount of time needed for ~~delivery and installation of purchased DCNC~~ procuring the one or more products; and

~~apply~~ scheduling the procurement of the one or more products ~~determined DCNC~~ in advance of ~~each of~~ the future time ~~times~~ by at least the determined ~~based on the~~ lead time ~~determined with respect to the future times~~.

18. **(Canceled)**

19. **(Canceled)**

20. **(Canceled)**

21. (**Canceled**)

22. (**Currently amended**) The system of claim 17 wherein said ~~computer-executable instructions to~~ determining[[e a]] the total bandwidth capacity of the network ~~(TNC) at each of the future times~~ time comprises ~~computer-executable instructions to~~ determining[[e]] a present bandwidth capacity of the network ~~(PNC)~~ and ~~to~~ identifying a planned change in network bandwidth capacity ~~(PCNC)~~ to be applied to the network between a present time and ~~each of~~ the future ~~times~~ time.

23. (**Currently amended**) The system of claim 17 wherein said ~~computer-executable instructions to~~ determining[[e]] a change in network bandwidth capacity ~~(DCNC)~~ comprises ~~computer-executable instructions to~~ determining[[e]] one or more of the following: a current utilization ~~(CU)~~ of the network, a growth trend of a utilization of the network, or a cost measure of a bandwidth capacity to be added to the network.

24. (**Currently amended**) The system of claim 23 wherein ~~said~~ the current utilization ~~(CU)~~ of the network is indicative of a high percent usage of a present bandwidth capacity of the network ~~(PNC)~~ for a particular percentage of time.

25. (**Original**) The system of claim 23 wherein the growth trend is based on a regression of data representative of a past growth of the utilization of the network.

26. (**Currently amended**) The system of claim 17 wherein said ~~computer-executable instructions to~~ determining[[e]] a total demand ~~of users (TUD)~~ for the network at ~~each of~~ the future ~~times~~ time comprises ~~computer-executable instructions to~~ determining[[e]] a present demand of users ~~(PUD)~~ for the network and ~~to~~ determining[[e]] an anticipated change in demand of users ~~(CUD)~~ for the network between a present time and ~~each of~~ the future ~~times~~ time.

27. (**Currently amended**) The system of claim 26 wherein said ~~computer-executable instructions to~~ determining[[e]] an anticipated change in demand of users ~~(CUD)~~ for the network comprises ~~computer-executable instructions to~~ determining[[e]] a demand requirement for a roll-out of an application operating via the network.

28. (**Currently amended**) The system of claim 17 wherein said ~~computer-executable instructions to~~ determining[[e]] a predicted utilization ~~(PU)~~ of the network at ~~each of~~ the future ~~times~~ time comprises ~~computer-executable instructions to~~ dividing[[e]] the total demand of users

~~(TUD)~~ for the network by the total bandwidth capacity of the network ~~(TNC)~~ at ~~each of~~ the future ~~times~~ time.

29. (**Original**) The system of claim 17 wherein the acceptable utilization of the network is a function of a response time of an application operating via the network.

30. (**Currently amended**) The system of claim 29 wherein the response time of the application is a function of one or more of the following: a distance between a client and a server of the application wherein ~~said~~ the client and server are coupled to the network, a connection speed of the client to the network, or a utilization of the network during a period of time at which the client accesses the application.

31. (**Currently amended**) The system of claim 30 ~~further comprising computer-executable instructions to~~ wherein the operations further comprise planning a budget for applying the determined change in network bandwidth capacity ~~(DCNC)~~ to the network and ~~to~~ determining[[e]] a cost measure of the determined change in network bandwidth capacity ~~(DCNC)~~.

32. (**Currently amended**) A tangible computer-readable storage medium ~~computing system with a processor~~ having stored thereon computer-executable instructions that, in response to execution by a computing device, cause the computing device to perform operations ~~to perform a method to maintain bandwidth capacity of a network, the method~~ comprising:

~~defining~~ determining a future ~~times~~ time ~~at~~ for which a bandwidth capacity of the network is evaluated;

determining a total bandwidth capacity of the network ~~(TNC)~~ at ~~each of~~ the future time ~~times~~;

determining a total demand ~~of users (TUD)~~ for the network at ~~each of~~ the future time ~~times~~;

determining a predicted utilization ~~(PU)~~ of the network at ~~each of~~ the future time ~~times~~ as a function of the total demand ~~of users (TUD)~~ and the total bandwidth capacity of the network ~~(TNC)~~;

~~defining~~ determining a maximum acceptable utilization ~~and a minimum acceptable utilization~~ of the network at ~~each of~~ the future time ~~times~~;

~~comparing the predicted utilization (PU) of the network to the maximum and minimum acceptable utilization of the network at each of the future times;~~

~~based on said comparing, defining an adjusted predicted utilization (APU) at each of the future times, said defined APU being between the maximum and minimum acceptable utilization of the network;~~

determining, for ~~each~~ the future time, a change in total network bandwidth capacity ~~(DCNC)~~ to be applied to the network in order to increase ~~or decrease~~ the total bandwidth capacity of the network, ~~to maintain the defined APU~~ the change based at least partly on a difference between the predicted utilization of the network and the maximum acceptable utilization;

determining ~~at each of the future times time~~ a lead time for adding one or more ~~a~~ products for ~~applying~~ providing the determined change in total network bandwidth capacity ~~(DCNC)~~ to the network, the lead time indicating an amount of time needed to procure the one or more products; and

initiating procurement of the one or more products ~~applying the determined DCNC~~ in advance of ~~each of~~ the future time by at least the determined lead time ~~times based on the lead time determined with respect to the future times~~.

33. (**Canceled**)

34. (**Canceled**)

35. (**Currently amended**) The tangible computer-readable storage medium ~~computing system with a processor~~ of claim 34 wherein the lead time is a function of an installation time for installing ~~said~~ the one or more products and an advance purchase time for obtaining ~~said~~ the one or more products.

36. (**Currently amended**) The tangible computer-readable storage medium ~~computing system with a processor~~ of claim 32 wherein said determining ~~a~~ the total bandwidth capacity of the network ~~(TNC)~~ at ~~each of~~ the future ~~times~~ time comprises: ~~is a function of~~

determining a present bandwidth capacity of the network; ~~(PNC)~~ and

identifying a planned change in network bandwidth capacity ~~(PCNC)~~ to be applied the network between a present time and ~~each of~~ the future ~~times~~ time.

37. (**Currently amended**) The tangible computer-readable storage medium ~~computing system with a processor~~ of claim 32 wherein said determining, for the future time, the ~~a~~ change in network bandwidth capacity ~~(DCNC) is a function of~~ utilizes one or more of the following: a current utilization (CU) of the network, a growth trend of a utilization of the network, or a cost measure of a bandwidth capacity to be added to the network.

38. (**Currently amended**) The tangible computer-readable storage medium ~~computing system with a processor~~ of claim 32 wherein said determining [[a]] the total demand ~~of users (TUD)~~ for the network at ~~each of~~ the future ~~times~~ time ~~is a function of~~ comprises:

determining a present demand of users ~~(PUD)~~ for the network; and

determining a change in demand of users ~~(CUD)~~ for the network between a present time and ~~each of~~ the future ~~times~~ time.

39. (**Currently amended**) The tangible computer-readable storage medium ~~computing system with a processor~~ of claim 32 wherein said determining ~~a~~ the predicted utilization ~~(PU)~~ of the network at ~~each of~~ the future ~~times~~ time comprises dividing the total demand ~~of users (TUD)~~ for the network by the total bandwidth capacity of the network ~~(TNC)~~ at ~~each of~~ the future ~~times~~ time.

40. (**Currently amended**) The tangible computer-readable storage medium ~~computing system with a processor~~ of claim 32 wherein the acceptable utilization of the network is a function of a response time of an application operating via the network.

41. (**Currently amended**) The tangible computer-readable storage medium ~~computing system with a processor~~ of claim 32 wherein the ~~method~~ operations further comprises:

planning a budget for applying the determined change in network bandwidth capacity ~~(DCNC)~~ to the network; and

determining a cost measure of the determined change in network bandwidth capacity ~~(DCNC)~~.

42. (**Currently amended**) The method of claim 15 wherein said determining ~~a~~ the cost measure of the determined change in network bandwidth capacity comprises determining a monetary cost measure of the determined change in network bandwidth capacity by analyzing past trends of cost increases or decreases for networks of similar size, distance, and location.

43. (**Currently amended**) The method of claim 1 wherein the one or more future times are on fixed time intervals.

44. (**Canceled**) ~~The system of claim 17 wherein the future times are on fixed time intervals.~~

45. (**Canceled**) ~~The computing system of claim 32 wherein the future times are on fixed time intervals.~~

46. (**New**) The method of claim 1, further comprising determining the change in total network bandwidth capacity at least partly based on an amount of time the network is over utilized.

47. (**New**) The method of claim 45, wherein the change in total network bandwidth capacity is substantially zero if the network is over-utilized below a first amount of time during an evaluation time period.

48. (**New**) The method of claim 46, wherein the first amount of time is less than a majority of the evaluation time period.